(d, α) Reactions on O^{1}, N^{14} and C^{12} by 14.7 MeV Deutrons

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are represented approximately by the circular-arc rule. Both the limiting dielectric constants at low frequencies and the conductivities at higher frequencies deccreased on application of shearing stress. It is considered that these changes in the dielectric properties of emulsions under shear may be caused by the breaking up of particle agglomerates. The limiting dielectric constants at high frequencies were subjected to no shearing effect, and are expressed best by the Bruggeman equation over the whole range of concentration. The data are discussed in the light of the previous theory on the interfacial polarization.

(d, α) Reactions on O^{16}, N^{14} and C^{12} by 14.7 MeV Deutrons

Takuji YANABU

Journal of the Physical Society of Japan, **16**, 2118 (1961)

Angular distributions of α particles resulting from $O^{16}(d, \alpha_0)N^{14}$ (ground state), $N^{14}(d, \alpha_0)C^{12}$ (ground state), $N^{14}(d, \alpha_1)C^{12}$ (first exited state), $C^{12}(d, \alpha_0)B^{10}$ (ground state) and $C^{12}(d, \alpha_1)B^{10}$ (first exited state) reactions were studied. α partices from the $O^{16}(d, \alpha_0)N^{14}$, $C^{12}(d, \alpha_0)B^{10}$ and $C^{12}(d, \alpha_1)B^{10}$ reactions exhibited forward peaks and backward peaks simultaneously, while α particles from $N^{14}(d, \alpha_0)C^{12}$ reaction showed forward peaks and oscillatory behavior.

α particles leaving N^{14} and C^{12} nuclei in their $T=1$ state were also observed in the forward angle, and the isotopic spin conservation rule seemed to be violated.

The reaction mechanism is then discussed on the basis of the surface direct reaction, the compound nucleus formation and α prticle clustering in the target nucleus. It is concluded that α clustering may play an important role in the (d, α) reaction.

Effects of the Addition of Various Oxides on the Crystallization of Lithia-Silica Glass

Sumio SAKKA and Megumi TASHIRO

Yogyo Kyokaishi (*Journal of the Ceramic Association, Japan*), **69**, 67 (1961)

Generally, on the reheating of lithia-silica glass, it starts to crystallize at the temperatures near or below the softening point to convert into the polycrystalline material without deformation (M. A. Matveev, V. V. Velya, *Steklo i Keramika*, **16** [10] 14 (1959).

In the present study, various oxides were added as the third component to a lithia-silica glass of the composition, Li_2O 25, SiO_2 75 mol%, and their effects on the crystallization of the base glass on reheating were investigated.

It was found that there is a limit in the amount for each oxide, and the addition over the limit inhibits the crystallization of the glass giving rise to the